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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/560,071	12/09/2005	Rupert N Anderton	124-1138	9668
23117 7590 05/01/2008 NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203				
EXAMINER				
GREEN, YARA B				
ART UNIT		PAPER NUMBER		
2884				
MAIL DATE		DELIVERY MODE		
05/01/2008		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/560,071

**Applicant(s)**

ANDERTON ET AL.

**Examiner**

YARA B. GREEN

**Art Unit**

2884

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 February 2008.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3 and 5-13 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1,3 and 5-13 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 2/1/2008, 12/9/2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO/SB08)  
Paper No(s)/Mail Date \_\_\_\_\_  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

This Office Action is in response to Applicant's Amendment February 1, 2008 Claim 1 has been amended. Claims 2, 4, and 14 have been cancelled. No new claims have been added. Currently, claims 1, 3, and 5-13 are pending.

#### ***Response to Amendment***

1. Applicant's amendment to Figure 1 has successfully overcome the objection set forth in paragraph 2 of the previous Office Action.
2. Applicant's amendment to Figure 2 has successfully overcome the objection set forth in paragraph 3 of the previous Office Action.

#### ***Response to Arguments***

3. Applicant's arguments, see paragraph 1 of page 8, filed February 1, 2008, with respect to objection to the drawing set forth in paragraph 4 of the previous Office Action have been fully considered and are persuasive. The objection of the drawings has been withdrawn.
4. Applicant's arguments with respect to claim 1 has been considered but are moot in view of the new ground(s) of rejection.

#### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 1, 3, 7, 9, and 12-13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lettington et al. (WO 00/14587; published March 16, 2000) in view of Nikolov et al. (Patent No. 6,876,784; filed May 30, 2002).

Re **claims 1 and 13**, Lettington et al. disclose a passive millimeter wave radiation detector **30,31** (pg. 17, para. 1, lines 1-2; Abstract; pg. 10, para. 3, lines 2-3) and a lens arrangement, the lens arrangement comprising a polarizing element **20,22** and an optical corrector **60**, the polarizing element being arranged to selectively transmit radiation of a first polarization and to selectively reflect radiation of a second polarization (pg. 4, para. 2, lines 1-6; pg. 5, para. 9, lines 1-3), and the optical corrector having a second surface is shaped to correct aberrations in the present lens arrangement (pg. 19, para. 1, lines 1-6).

In view of the embodiment, as given by the schematic in Figure 15, there is no fundamental incompatibility between the curves of the optical corrector **60** and the polarizing element **22**. It would have been obvious of ordinary skill in the art to use a means of support between the two elements, as there are limited options in which they may be connected (flanges, pins, etc.) such that the optical corrector may support the element upon a surface.

Lettington et al. do not disclose the polarizing element being capable of focusing the second reflected radiation. In the same field of endeavour of millimeter radiation detection, Nikolov et al. disclose the polarizing element having beam splitting capabilities such that the radiation with a first polarization is transmitted and focused and the radiation with a second polarization is reflected and focused to another optical element (col. 3, lines 34-62). One of ordinary skill in the art would have

been motivated to modify the polarizing element of Lettington et al. to focus radiation of the second polarization in order to reduce light loss and maximize the use of the incident radiation.

Re **claim 3**, Lettington et al., as modified by Nikolov et al., disclose the limitations of claim 1, as mentioned previously, in which the polarizing element is positioned between the corrector and the detector. However, one of ordinary skill in the art would have been motivated to reverse the order of the parts such that the optical corrector is positioned between the polarizing element and the detector, as there is no specific advantage disclosed to dictate the ordering of the components (see *In re Gazda*, 219 F.2d 449, 104 USPQ 400 (CCPA 1955).

Re **claim 7**, Lettington et al., as modified by Nikolov et al., disclose the limitations of claim 1, as mentioned previously, but do not disclose implementing more than one optical corrector. It would have been obvious to one of ordinary skill to use a single optical corrector with the necessary profiles and attributes to remedy the desired aberrations or to use a compound system of optical correctors in order to accomplish the same result. As is well known in optics, multiple lenses may be condensed into a single complex lens and vice versa. Therefore, a mere duplication of parts has no patentable significance since the same results can be yielded (see *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960).

Re **claim 9**, Lettington et al., as modified by Nikolov et al., disclose the limitations of claim 7, as mentioned above and further disclose the further optical corrector **60** has a rear surface with a different profile to the profile of the front surface (see figure 15, element 60).

Re **claim 12**, Lettington et al., as modified by Nikolov et al., disclose a radiation detection apparatus as claimed in claim 1, wherein the radiation detector is an imaging radiation detector (pg. 5, para. 6, lines 3-5).

7. **Claims 5, 6, and 10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Lettington et al. (WO 00/14587; published March 16, 2000) and Nikolov et al. (Patent No. 6,876,784; filed May 30, 2002), as applied to claims 1 and 7 above, and further in view of Silver (Microwave Antenna Theory and Design, 1997).

Lettington et al., as modified by Nikolov et al., disclose the limitations of claims 1 and 7, as mentioned above. Lettington et al., however, is silent as to the material and therefore densities of the optical corrector. Therefore, those materials with their corresponding densities that are well known in the art may be used. In the same field of endeavour of millimeter and sub-millimeter detection, Silver discloses that polymers such as polystyrene, with refractive index 1.6 ( $1.001 < n < 2$ ) are suitable materials for lenses being used in the aforementioned wavelengths (pg 390, sect. 11-3). It is well known in the art that polymers can be configured to have any density desired, and therefore, it would be obvious to one of ordinary skill in the art to use a polymer as disclosed by Silver in the detector of Lettington et al. so that it may be configured to have a density such as  $30 \text{ g} \cdot \text{l}^{-1}$ .

8. **Claim 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over Lettington et al. (WO 00/14587; published March 16, 2000) and Nikolov et al. (Patent No. 6,876,784; filed May 30, 2002), as applied to claim 7 above, and further in view of Stenberg (US Patent No. 4,224,626; published September 23, 1980).

Lettington et al., as modified by Nikolov et al., disclose the limitations of claim 7, as mentioned previously, as well as the optical corrector having an aspherical, plane, or spherical profile (pg. 19, para. 1, lines 1-6). However, Lettington et al. does not disclose the cross-section of the optical corrector to be elliptical. In the same field of endeavour of sub-millimeter and millimeter

radiation detection, Sternberg disclose that it is well known in the art to use an ellipsoidal lens in order to correct for an aberration such as astigmatism (col. 1, lines 51-62; see also “Aberrations” <http://physics.tamuk.edu/~suson/html/4323/aberrtn.html>, 1997). Therefore, it would have been obvious to one of ordinary skill in the art to modify the optical corrector of Lettington et al. to have an elliptical cross-section as disclosed by Sternberg in order to be able to correct for astigmatism.

9. **Claim 11** is rejected under 35 U.S.C. 103(a) as being unpatentable over Lettington et al. (WO 00/14587; published March 16, 2000) and Nikolov et al. (Patent No. 6,876,784; filed May 30, 2002), as applied to claim 7 above, and further in view of Auletti (US Patent No. 4,482,513; published November 13, 1984).

Lettington et al., as modified by Nikolov et al., disclose the limitations of claim 7, as mentioned previously, but are silent as to the material of which the optical corrector is made which allows that which is well known in the art to be implemented. In the same field of endeavour of millimeter radiation detection, Auletti discloses fabricating lens using a plastics foam material (col. 2, lines 24-42). One of ordinary skill in the art would have been motivated to fabricate the optical corrector of Lettington et al. as disclosed by Auletti to permit facile fabrication of optical correctors in a variety of geometrical configurations.

### ***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to YARA B. GREEN whose telephone number is (571)270-3035. The examiner can normally be reached on Monday - Thursday, 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on (571) 272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Art Unit: 2884

Yara B. Green

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